

WHAT IS CLAIMED IS:

1. A polyisocyanate compound obtained by converting a bis(isocyanatomethyl)cyclohexane into a urethodione compound, the
5 polyisocyanate compound having a content of a latent NCO group [(a content of free NCO group after a heat treatment at 180°C for 1 hour) - (a content of free NCO group before the heat treatment)] of 16 to 30% by weight and an isocyanurate fraction [a content of an isocyanurate skeleton structure $\times 100 /$ (a content of an isocyanurate skeleton structure + a
10 content of a urethodione structure)] smaller than 5% by weight.
2. A process for producing a polyisocyanate compound described in Claim 1 which comprises converting a bis(isocyanatomethyl)cyclohexane into a urethodione compound at a temperature in a range of -10 to 80°C in a
15 presence of a catalyst for forming a urethodione compound and removing the unreacted bis(isocyanatomethyl)cyclohexane and the catalyst by distillation.
3. A process according to Claim 2, wherein the catalyst for forming a
20 urethodione compound is a tris(dialkylamino)phosphine.
4. A polyisocyanate polyaddition composition which is obtained by reacting (A) a polyisocyanate compound described in Claim 1 and (B) a compound having active hydrogen atom, which comprises a combination of
25 (a) a compound having at least two active hydrogen atoms in one molecule and (b) a compound having one active hydrogen atom in one molecule in

amounts such that a ratio of an amount by equivalent of active hydrogen atom in component (a) to an amount by equivalent of active hydrogen atom in component (b) is in a range of 1 to 99, in a manner such that a ratio of an amount by equivalent of active hydrogen atom in component (B) to an amount by equivalent of isocyanate group in component (A) (a ratio of amounts by equivalent of active hydrogen atom / isocyanate group) is in a range of 1.0 to 2.0.

5. A composition according to Claim 4, wherein the compound having at least two active hydrogen atoms in one molecule of component (a) is at least one compound selected from aliphatic, alicyclic and aromatic diols and diamines.

6. A composition according to any one of Claims 4 and 5, wherein the compound having one active hydrogen atom in one molecule of component (b) is at least one compound selected from aliphatic, alicyclic and aromatic monools, monoamines, lactams and oximes.

7. A powder coating material which comprises at least one main material selected from polyester polyols, acrylic polyols and fluorinated polyols and a curing agent comprising a polyisocyanate polyaddition composition described in any one of Claims 4, 5 and 6.

8. A material according to Claim 7, wherein the main material comprises a polyester polyol having a fraction of hydroxyl group bonded to secondary

carbon atom of 30% or greater based on an amount of an entire hydroxyl group.

9. A powder coating material which comprises at least one main material selected from polyester polyols, acrylic polyols and fluorinated polyols and a curing agent comprising a polyisocyanate polyaddition composition which is obtained by reacting (A) a polyisocyanate compound obtained by converting a bis(isocyanatomethyl)cyclohexane into a urethodione compound, the isocyanate compound having a content of a latent NCO group [(a content of free NCO group after a heat treatment at 180°C for 1 hour) - (a content of free NCO group before the heat treatment)] of 16 to 30% by weight and an isocyanurate fraction [a content of an isocyanurate skeleton structure $\times 100 /$ (a content of an isocyanurate skeleton structure + a content of a urethodione structure)] smaller than 5% by weight, and (B) a compound having active hydrogen atom which comprise a combination of (a) a compound having at least two active hydrogen atoms in one molecule and (b) a compound having one active hydrogen atom in one molecule in amounts such that a ratio of an amount by equivalent of active hydrogen atom in component (a) to an amount by equivalent of active hydrogen atom in component (b) is in a range of 1 to 99, wherein the reaction of component (A) and component (B) is conducted in a manner such that a ratio of an amount by equivalent of active hydrogen atom in component (B) to an amount by equivalent of isocyanate group in component (A) (ratio of amounts by equivalent of active hydrogen atom / isocyanate group) is in a range of 1.0 to 2.0.